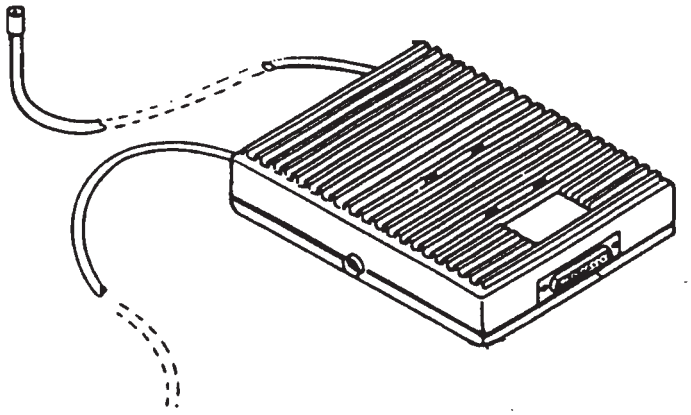
After Sales Technical Documentation

BOOSTER KIT
BSH–1



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AMENDMENT RECORD SHEET

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BOOSTER KIT BSH–1

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Introduction

General

The Booster Kit comprises the following main items: Booster BSH–1; Mounting Bracket MBM–3; Front Cable SCE–2; Extension Cable SCE–3; and RF Extension Cable XRH–1. The Booster Kit upgrades the signal output level of the phone to that of a full–powered mobile ie approx. 3W. Note that only the Booster unit is covered in this booklet; the three cables and the mounting bracket are included under non–serviceable accessories.

Technical Specifications

Modes of Operation

With power off, only the VBAT supply (+12 V) is available; the VBAT supply feeds the final amplifier stage.

With power on, mains switch (V218) is conducting, all voltages (+12 V, +8 V, +5 V) are on.

With the transmitter on, all voltages are on and the RF level is detected from an input sense circuit, hence the TX control voltage to the power amplifier primary stage is also switched on.

External Signals and Connections

X100 (RF_in) RF connector in

X101 (RF_out) RF connector out

X500 to Junction Box (D25)

Pin	Name	Description
1	HOOK OUT	Hook line from hook–switch
3, 17	GND	Supply ground (–)
4, 16	+VBAT	Supply voltage from vehicle battery (+)
6	VC	HFJ supply voltage to HP, used to carry ”power_on” command to booster
11	TXI/SCL	EEPROM clock line in startup, transmitter error line
18	HOOK/SDA	EEPROM data line from HFJ box startup, hook line to HFJ.
23	TXC	Pulse Width Modulated (PWM) power level control from phone to booster.
24	SGND	Signal ground to HFJ box.

DC Characteristics

Supply Voltages and Power Consumption

Signal	Min,	Type	Max.	Unit	Notes
+12V	1.0	1.2	1.5	A dc	Maximum Power Level
+8V	20	25	30	mA dc	
+5V	5	7	10	mA dc	

Control Signals

Signal	Pin	Notes
TXC	X500/23	TX power level control. HP control of booster gain. Value is fed to booster by PWM signal. Line is taken from processor port P92/PW1(pin 63) to bottom connector J1/2
HOOK	X500/18	HOOK line to HFJ/EEPROM serial dataline, line is acting as dateline during power up sequence and rest of time it is a HOOK line.
TXI/SCL	X500/11	Transmitter error line/EEPROM serial clock line. TXI indicates if the transmitter of the booster is working properly (”0” means transmitter error and ”1” means no transmitter error). During power up sequence the line is reserved for EEPROM serial clock.

AC Characteristics

Tx Input from Phone

Type	Analogue radio frequency signal
Frequency range	872 – 905 MHz
Nominal Level	34.5dBm
Tolerance	+2 −4 dB

Tx Output to Antenna

Type	Analogue radio frequency signal
Frequency range	872 – 905 MHz
Nominal Level	34.5dBm
Tolerance	+2 −4 dB

Power Levels

P0	34.5 dBm / 2.82 W
P1	30.5 dBm / 1.12 W
P2	26.5 dBm / 0.45 W
P3	22.5 dBm / 0.18 W
P4	18.5 dBm / 71 mW
P5	14.5 dBm / 28 mW
P6	10.5 dBm / 11 mW
P7	6.5 dBm / 4.5 mW

Power Levels Tolerance

+2/–4 dB

Spurious Signals at Antenna Connector X100

Standby State

TX band	<–60 dBm
RX band	<–70 dBm
Otherwise: 100kHz–1GHz	<–57 dBm
1GHz–4GHz	<–47 dBm

Transmit State

RX band	<–80 dBm
Otherwise: 100kHz–1GHz	<–36 dBm
1GHz–4GHz	<–30 dBm

TXC Power Level Control Signal

Type	PWM
Level	CMOS
Frequency	4.8 kHz
Load impedance	>50kΩ
Number of duty cycle steps:	255

VC Booster Enable

Type	dc voltage
Level PWR ON PWR OFF	7V to 12V 0V to 1V
Load impedance	>10kΩ

RX Branch from X100 to X101

Frequency range	917 to 950MHz
Gain (typical)	6dB
Gain (minimum)	3.5dB
Noise Figure (typical)	5 dB

Functional description

General

When the HF Junction box (HFJ) is connected and operational its output line designated VC (+12 V d.c.) provides the power_on command to the RF booster. The booster operates as follows.

HFJ and Booster

After the HFJ is turned on, it first checks whether the booster is connected or not. This is done by reading the contents of the assumed booster EEPROM. If the EEPROM contents identification part is recognized, the HFJ sends an initialization message which indicates to the phone that the HFJ and the booster are connected. The RSSI and power level compensation values are also sent, together with the initialization message. Following the initialization message, the HFJ reads the TXI/SCL line after a set time period.

Booster

Before the power_on command is enabled, only the mains power switch is operational. When the booster receives the power_on command, operation is as follows – the mains power switch starts to conduct and +12 V is fed to the +8 V regulator. The booster is ready for normal operation. Incoming TXC (transmitter control, PWM) is initially fed through a CMOS Buffer D300 and then converted to a d.c. level. This d.c. level is fed to a comparator/driver which forms part of the RF amplifier feedback loop. The comparator/driver controls the gain of the RF amplifier.

High RF output at low RF input, or vice versa, signifies a malfunction. Mains power will be turned off by HFJ; mains power will be turned on again only if the power_on command is repeated (low to high edge transition).

I/O Map EEPROM Contents

The first sixteen (16) bytes carry the RF booster identification part (text string ” RF booster 1.0 ”), the next ten (10) bytes carry power level compensation values and the last ten (10) bytes, RSSI compensation values.

When HFJ wants to read the contents of EEPROM, it has to disable the HOOK/SDA and TXI/SCL lines first. After 10 ms, read operation the lines will be back to normal.

Circuit Description

Receiver Path

The receiver signal path consists of two bandpass–filters, a RF amplifier and its biasing circuit.

The RF signal from antenna connector X100 is received via RX filter Z102. The signal is then amplified by V100. The amplified signal is then fed through duplex filter Z105 to connector X101. Impedance matching between V100 and the duplex filter is achieved with microstrip Z103 / Z104.

Transmitter Path

RF Circuits

The fixed–level RF signal from the phone is applied to connector X101 before being fed through a duplex filter Z105. The filtered signal is fed through an attenuator, comprising resistors R200, R201, R202 and R203, to the input of a power amplifier hybrid N200. The hybrid, which is controlled by the primary stage supply voltage, amplifies the signal to the desired level. The hybrid is followed by a directional coupler, which is needed for power control circuit feedback. Finally, the signal is fed through TX filter Z105 to antenna connector X100.

Power Level Control Circuit

The pulse–width modulated control signal TXC is initially fed through a CMOS buffer D300 before being converted into a d.c. voltage by an RC filter network comprising R301, R302, C300 and C301. This analogue signal is fed through rectifier diode V603, and then to the non–inverting input of a comparator N300. A voltage proportional to the output power is rectified from the directional coupler (V202) by biased Schottky diode V201. The rectified voltage is fed through R309 to the inverting input of the comparator N300. The output signal from this comparator adjusts the primary stage supply voltage of power hybrid N200 until both inputs of the comparator have equal voltage levels. This ensures the power control loop maintains the output power precisely at the desired value.

Transmitter Enable Circuit

The booster receives the transmitter enable command from the incoming RF signal, which is rectified by Schottky diode pair V200. The rectified signal is fed to the non–inverting input of a comparator N300. The inverting input of the comparator has a fixed reference voltage, +4 V, so when the rectified signal is higher than the reference the output of the comparator goes high and the transmitter is switched on by transistors V600 and V601.

Power–off Circuit

The booster unit is also provided with a 'watchdog' function, which turns off all supply voltages when a malfunction is detected. Comparator N300 detects the incoming RF signal and comparator N300 detects the output signal of the booster. Both comparator output signals are fed through voltage dividers to an EXOR time delay (approx 3s) circuit comprising R511, C606 gate D300. The D300 output signal is fed via comparator N400, which forms output TXI which in turn is fed to HFJ.

If TXI goes low, the HJF executes power off, i.e. removes VC. This, in turn makes mains switch V218 non–conductive ensuring all supply voltages disappear. When VC is removed, V219 becomes non–conductive, which in turn makes V501 conduct. V501 discharges C606 so that restarting the booster is possible when VC is reapplied.

Watchdog Truth Table

Input Detector	Output Detector	Status	TXI
1	1	OK	1
0	1	Error	0
1	0	Error	0
0	0	OK	1

Supply Voltage Circuits

The supply from the vehicle battery is applied to connector X500. The voltage is first fed through a fuse, followed by suppressor V212 which protects the booster from overvoltages and transients. The voltage is then fed through a filter (L210, C213) eliminating potential interference generated by a vehicle's electrical system (e.g. alternator). Following the filter is a mains power switch V218, controlled by the PWRON signal via transistor V219. After the switch there is a regulator which feeds an 8 V supply to the main parts of the booster including N601, and the 5 V regulator which provides the supply for D300, D500 and some biasing circuits.

HOOK/SDA Buffering

The HOOK/SDA–line is normally used for carrying the ONHOOK/OFFHOOK information from mount connector MCH–3 to the CPU of the HFJ. During startup this line is also needed to carry the serial data from EEPROM to the HFJ. During this operation the normal operation of the HOOK/SDA–line must be disabled.

The TXI/SCL–line carries the serial clock from HFJ to EEPROM. When no information is passed to/from EEPROM, TXI/SCL has a potential of 8 V. When data is being transferred, the potential varies between 0 V and 8 V. If the watchdog circuit finds a malfunction in the transmitter, TXI/SCL goes permanently to 0 V, which inhibits the power–off cycle.

The TXI/SCL line is fed via R509 and C502 to pin 13 of D300. Normally it has a potential of approx. 3.7 V, which is considered a logic 1 signal. When pulses appear in the TXI/SCL–line, they loose their d.c. value in capacitor C502. The positive part of the a.c. signal is grounded via V602 and R528. The negative part reduces the voltage in pin 13 to 1.2 V, which is considered a logic 0 signal.

Since pin 12 of D300 is connected directly to 5V, the output of D300 rises high during negative cycles. Output is charging via V505, R500 and capacitor C503. V505 is also preventing the output of D300 from discharging C503, therefore the voltage over C503 is gradually approaching a value close to 5 V.

When the mount connector is ONHOOK, pin 10 of D300 is pulled to ground via R501 (33 kΩ). However, when TXI/SCL–pulses appear, the voltage in pin 10 rises to a logic 1. Pin 9 has a pull–up to 5 V, therefore the output drops to 0. This in turn pulls pin 10 of the open collector type op.amp N400, to 0 V. Pin 11 of N400 is connected to 2.5 V potential and therefore the output of N400 (pin 13) will go to Hi–Z mode, which in turn allows the SDA–data from EEPROM to be transferred to HFJ.

Figure 1: Block Diagram

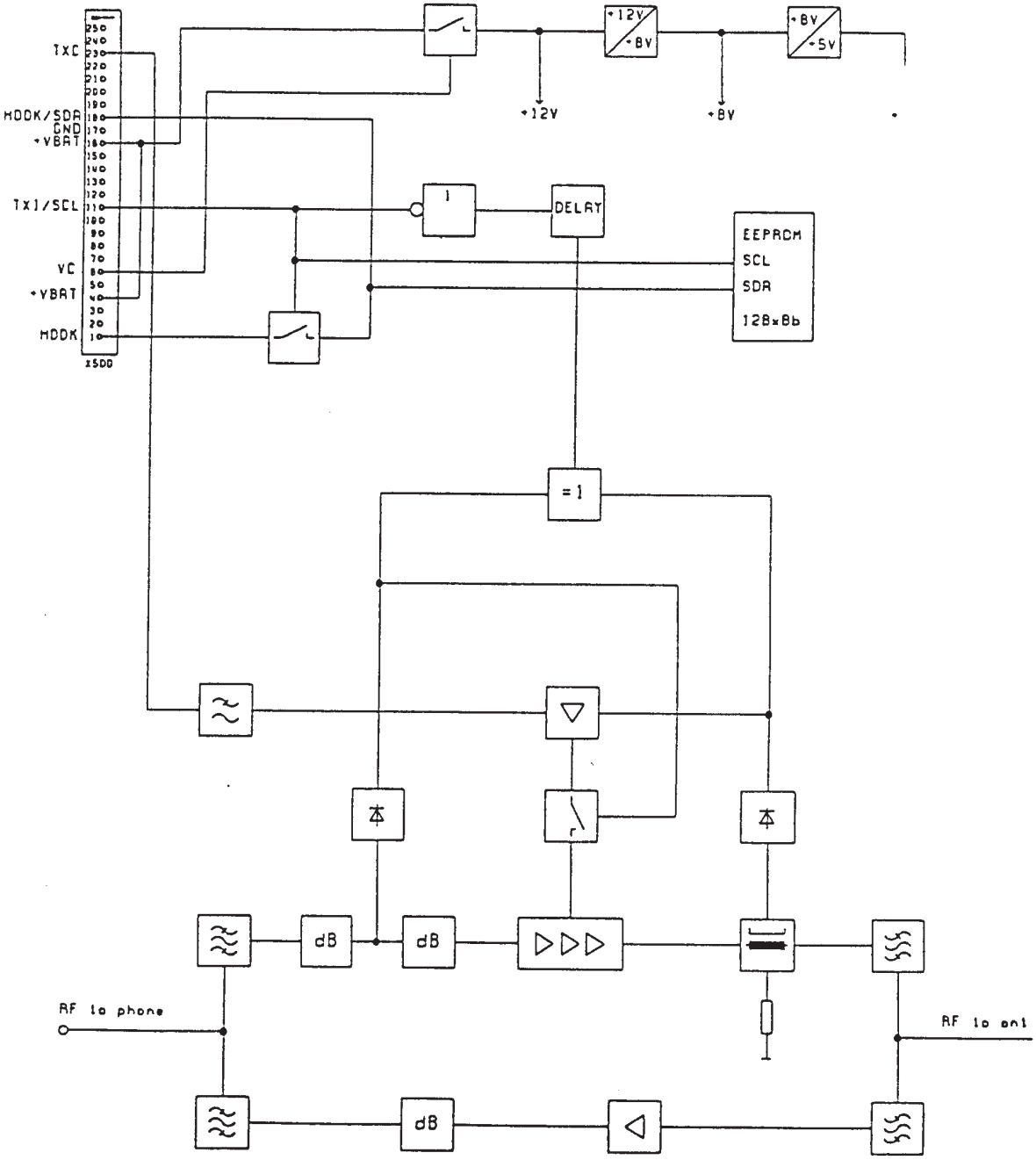


Figure 2: Component Layout Diagram (side 1) Version 05 9853883

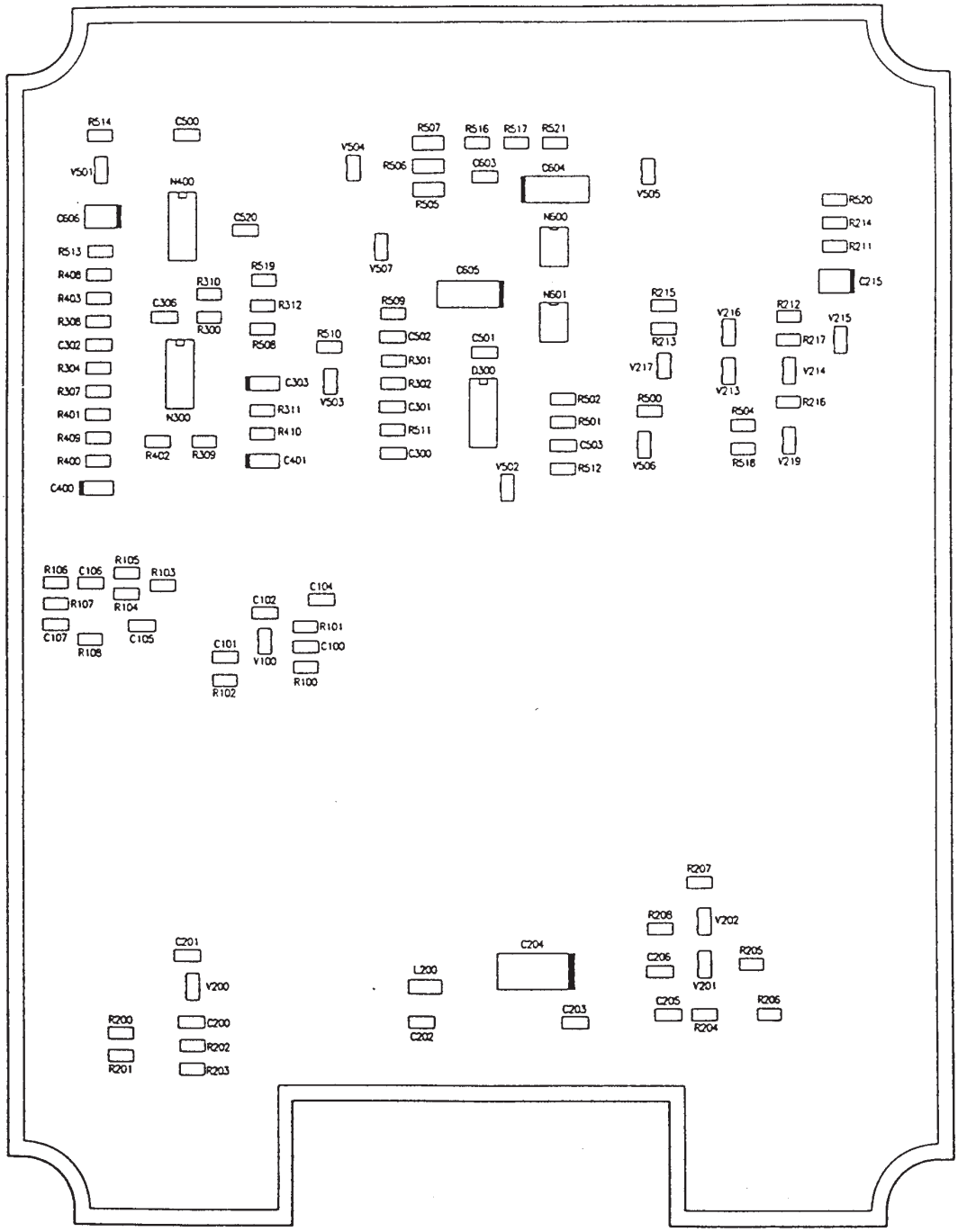
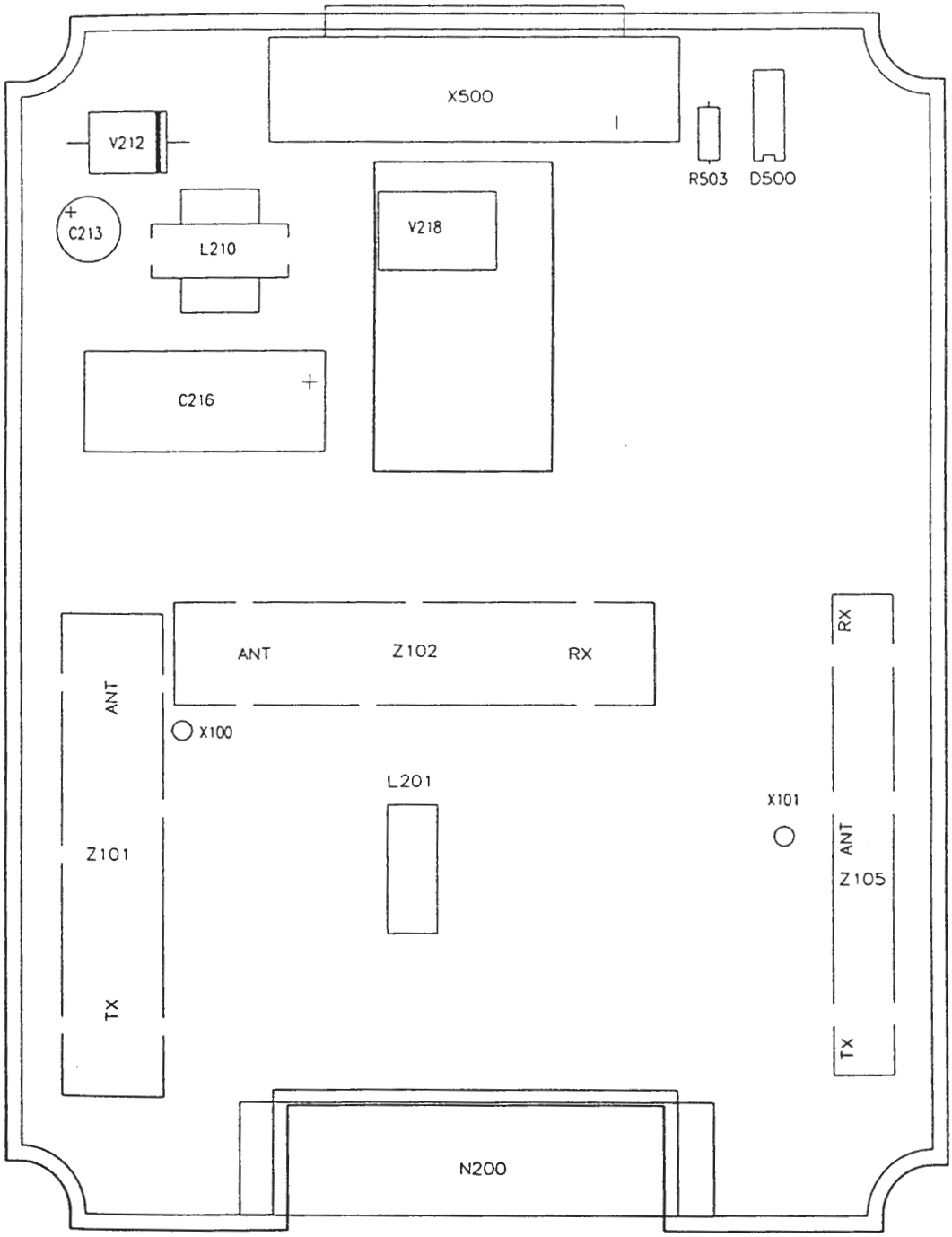


Figure 3: Component Layout Diagram (side 2) Version 05 9853883



Parts List

6E 0200100

ITEM	CODE	DESCRIPTION	VALUE	TYPE
R201	1411388	Chip resistor	33	5 % 0.12 W 1206
R202	1411429	Chip resistor	47	5 % 0.12 W 1206
R200	1411490	Chip resistor	100	5 % 0.12 W 1206
R203	1411490	Chip resistor	100	5 % 0.12 W 1206
R505	1411684	Chip resistor	1.0 k	5 % 0.12 W 1206
R506	1411684	Chip resistor	1.0 k	5 % 0.12 W 1206
R507	1411684	Chip resistor	1.0 k	5 % 0.12 W 1206
R206	1412198	Chip resistor	56	5 % 0.063 W 0805
R104	1412208	Chip resistor	12	5 % 0.063 W 0805
R521	1412303	Chip resistor	330	5 % 0.063 W 0805
R103	1412310	Chip resistor	470	5 % 0.063 W 0805
R105	1412310	Chip resistor	470	5 % 0.063 W 0805
R304	1412335	Chip resistor	1.0 k	5 % 0.063 W 0805
R500	1412335	Chip resistor	1.0 k	5 % 0.063 W 0805
R527	1412409	Chip resistor	1.5 k	5 % 0.063 W 0805
R101	1412416	Chip resistor	2.2 k	5 % 0.063 W 0805
R528	1412416	Chip resistor	2.2 k	5 % 0.063 W 0805
R313	1412423	Chip resistor	4.7 k	5 % 0.063 W 0805
R508	1412423	Chip resistor	4.7 k	5 % 0.063 W 0805
R212	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R217	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R300	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R307	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R400	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R403	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R408	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R502	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R504	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R516	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R517	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R519	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R520	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R523	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R524	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R503	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R525	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R534	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R301	1412511	Chip resistor	18 k	5 % 0.063 W 0805

ITEM	CODE	DESCRIPTION	VALUE	TYPE
R302	1412511	Chip resistor	18 k	5 % 0.063 W 0805
R410	1412536	Chip resistor	22 k	5 % 0.063 W 0805
R533	1412536	Chip resistor	22 k	5 % 0.063 W 0805
R308	1412729	Chip resistor	33 k	5 % 0.063 W 0805
R501	1412729	Chip resistor	33 k	5 % 0.063 W 0805
R207	1413635	Chip resistor	100 k	5 % 0.063 W 0805
R216	1413635	Chip resistor	100 k	5 % 0.063 W 0805
R310	1413635	Chip resistor	100 k	5 % 0.063 W 0805
R311	1413635	Chip resistor	100 k	5 % 0.063 W 0805
R312	1413635	Chip resistor	100 k	5 % 0.063 W 0805
R401	1413635	Chip resistor	100 k	5 % 0.063 W 0805
R402	1413635	Chip resistor	100 k	5 % 0.063 W 0805
R409	1413635	Chip resistor	100 k	5 % 0.063 W 0805
R512	1413635	Chip resistor	100 k	5 % 0.063 W 0805
R513	1413635	Chip resistor	100 k	5 % 0.063 W 0805
R514	1413635	Chip resistor	100 k	5 % 0.063 W 0805
R530	1413635	Chip resistor	100 k	5 % 0.063 W 0805
R531	1413635	Chip resistor	100 k	5 % 0.063 W 0805
R522	1413642	Chip resistor	56 k	5 % 0.063 W 0805
R526	1413709	Chip resistor	150 k	5 % 0.063 W 0805
R511	1413804	Chip resistor	1.0 M	5 % 0.063 W 0805
R102	1413924	Chip resistor	220	5 % 0.063 W 0805
R314	1413924	Chip resistor	220	5 % 0.063 W 0805
R518	1414011	Chip resistor	1.2 k	5 % 0.063 W 0805
R205	1414029	Chip resistor	3.3 k	5 % 0.063 W 0805
R509	1414029	Chip resistor	3.3 k	5 % 0.063 W 0805
R208	1414036	Chip resistor	8.2 k	5 % 0.063 W 0805
R309	1414036	Chip resistor	8.2 k	5 % 0.063 W 0805
R100	1414043	Chip resistor	1.8 k	5 % 0.063 W 0805
R204	1414406	Chip resistor	5.6 k	5 % 0.063 W 0805
C300	2309517	Ceramic cap.	100 n	10 % 50 V 1206
C301	2309517	Ceramic cap.	100 n	10 % 50 V 1206
C603	2309517	Ceramic cap.	100 n	10 % 50 V 1206
C200	2310336	Ceramic cap.	18 p	5 % 50 V 0805
C201	2310336	Ceramic cap.	18 p	5 % 50 V 0805
C205	2310375	Ceramic cap.	39 p	5 % 50 V 0805
C206	2310375	Ceramic cap.	39 p	5 % 50 V 0805
C610	2310375	Ceramic cap.	39 p	5 % 50 V 0805
C100	2310544	Ceramic cap.	1.0 n	5 % 50 V 0805
C101	2310544	Ceramic cap.	1.0 n	5 % 50 V 0805

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R201	1411388	Chip resistor	33	5 % 0.12 W 1206
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R200	1411490	Chip resistor	100	5 % 0.12 W 1206
R203	1411490	Chip resistor	100	5 % 0.12 W 1206
R505	1411684	Chip resistor	1.0 k	5 % 0.12 W 1206
R506	1411684	Chip resistor	1.0 k	5 % 0.12 W 1206
R507	1411684	Chip resistor	1.0 k	5 % 0.12 W 1206
R206	1412198	Chip resistor	56	5 % 0.063 W 0805
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R300	1412430	Chip resistor	10 k	5 % 0.063 W 0805
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R502	1412430	Chip resistor	10 k	5 % 0.063 W 0805
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R519	1412430	Chip resistor	10 k	5 % 0.063 W 0805
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R523	1412430	Chip resistor	10 k	5 % 0.063 W 0805
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R503	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R525	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R534	1412430	Chip resistor	10 k	5 % 0.063 W 0805
R301	1412511	Chip resistor	18 k	5 % 0.063 W 0805
R302	1412511	Chip resistor	18 k	5 % 0.063 W 0805
R410	1412536	Chip resistor	22 k	5 % 0.063 W 0805
R308	1412729	Chip resistor	33 k	5 % 0.063 W 0805
R501	1412729	Chip resistor	33 k	5 % 0.063 W 0805
R533	1412729	Chip resistor	33 k	5 % 0.063 W 0805
R207	1413635	Chip resistor	100 k	5 % 0.063 W 0805

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R216	1413635	Chip resistor	100 k	5 % 0.063 W 0805
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R402	1413635	Chip resistor	100 k	5 % 0.063 W 0805
R409	1413635	Chip resistor	100 k	5 % 0.063 W 0805
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R531	1413635	Chip resistor	100 k	5 % 0.063 W 0805
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R526	1413709	Chip resistor	150 k	5 % 0.063 W 0805
R511	1413804	Chip resistor	1.0 M	5 % 0.063 W 0805
R102	1413924	Chip resistor	220	5 % 0.063 W 0805
R314	1413924	Chip resistor	220	5 % 0.063 W 0805
R518	1414011	Chip resistor	1.2 k	5 % 0.063 W 0805
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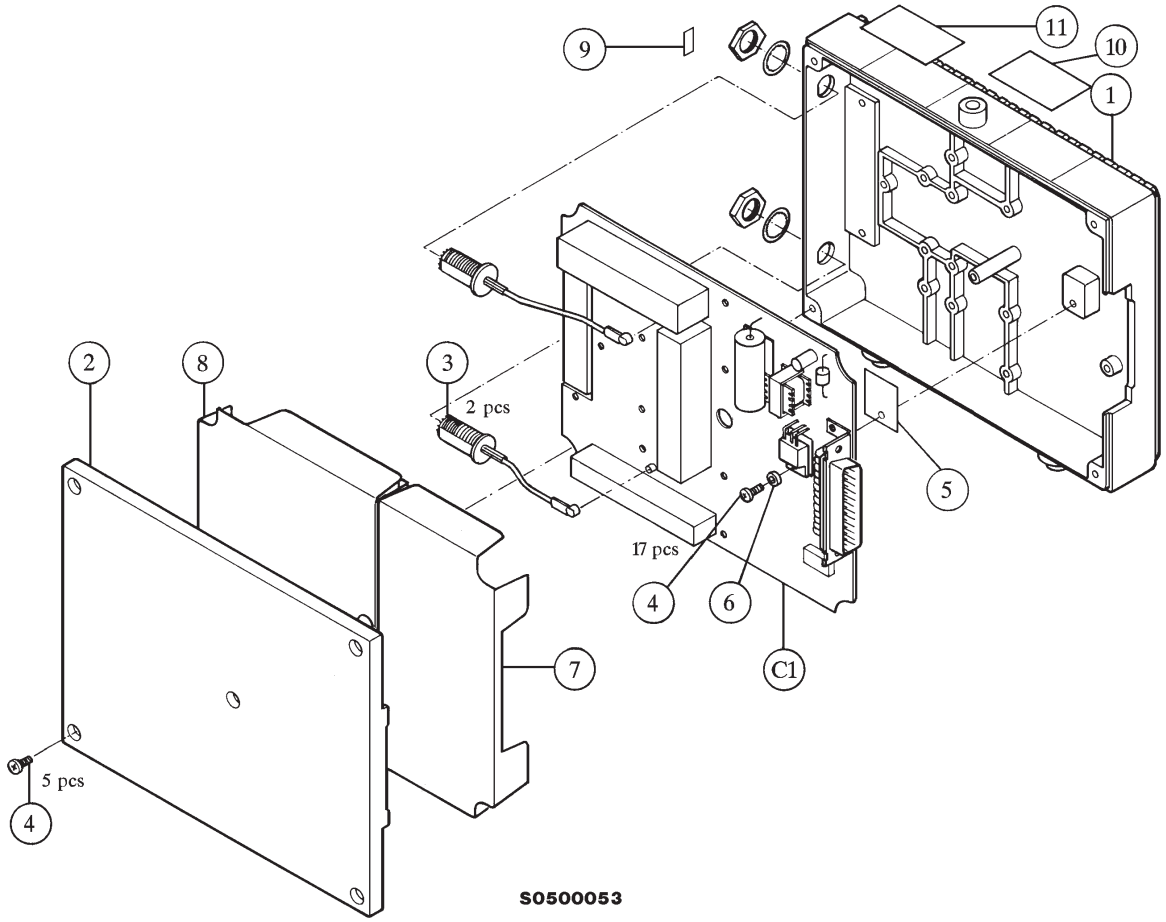
C603	2309517	Ceramic cap.	100 n	10 % 50 V 1206
C200	2310336	Ceramic cap.	18 p	5 % 50 V 0805
C201	2310336	Ceramic cap.	18 p	5 % 50 V 0805
C205	2310375	Ceramic cap.	39 p	5 % 50 V 0805
C206	2310375	Ceramic cap.	39 p	5 % 50 V 0805
C610	2310375	Ceramic cap.	39 p	5 % 50 V 0805
C100	2310544	Ceramic cap.	1.0 n	5 % 50 V 0805
C101	2310544	Ceramic cap.	1.0 n	5 % 50 V 0805
C102	2310544	Ceramic cap.	1.0 n	5 % 50 V 0805
C104	2310544	Ceramic cap.	1.0 n	5 % 50 V 0805
C105	2310544	Ceramic cap.	1.0 n	5 % 50 V 0805
C106	2310544	Ceramic cap.	1.0 n	5 % 50 V 0805
C302	2310544	Ceramic cap.	1.0 n	5 % 50 V 0805
C500	2310544	Ceramic cap.	1.0 n	5 % 50 V 0805
C609	2310713	Ceramic cap.	2.2 n	20 % 50 V 0805
C202	2310752	Ceramic cap.	10 n	20 % 50 V 0805
C203	2310752	Ceramic cap.	10 n	20 % 50 V 0805
C502	2310752	Ceramic cap.	10 n	20 % 50 V 0805
C306	2310791	Ceramic cap.	33 n	20 % 50 V 0805
C501	2310791	Ceramic cap.	33 n	20 % 50 V 0805

ITEM	CODE	DESCRIPTION	VALUE	TYPE
C503	2310791	Ceramic cap.	33 n	20 % 50 V 0805
C520	2310791	Ceramic cap.	33 n	20 % 50 V 0805
C213	2501605	Electrol. cap.	100 µ	20 % 35 V RM3.5
C216	2503803	Electrol. cap.	1000 µ	20 % 25 V H
C204	2604110	Tantalum cap.	10 µ	20 % 25 V 7.3x4.4x2.8
C303	2604209	Tantalum cap.	1.0 µ	20 % 16 V 3.2x1.6x1.8
C400	2604209	Tantalum cap.	1.0 µ	20 % 16 V 3.2x1.6x1.8
C401	2604209	Tantalum cap.	1.0 µ	20 % 16 V 3.2x1.6x1.8
C607	2604209	Tantalum cap.	1.0 µ	20 % 16 V 3.2x1.6x1.8
C608	2604209	Tantalum cap.	1.0 µ	20 % 16 V 3.2x1.6x1.8
C606	2604287	Tantalum cap.	3.3 µ	20 % 16 V 3.5x2.8x2.1
C604	2604431	Tantalum cap.	10 µ	20 % 16 V 6.0x3.2x2.8
C605	2604431	Tantalum cap.	10 µ	20 % 16 V 6.0x3.2x2.8
L201	3606921	Choke	10..220 MHz	2.5 turns
L210	3607898	Choke 2 A	900 µH/1 kHz	DH–TS582
L200	3608206	Chip coil	100 n	10 % 1206
V212	4100218	Trans. supr.	100 V 30A/40 ms	LDP24A
V200	4100567	Sch. diode x 2	BAS70–04	70 V 15 mA SERSOT23
V201	4100567	Sch. diode x 2	BAS70–04	70 V 15 mA SERSOT23
V603	4100567	Sch. diode x 2	BAS70–04	70 V 15 mA SERSOT23
V506	4106769	Zener diode	BZX84	5 % 4.7 V 0.3 W SOT23
V507	4106769	Zener diode	BZX84	5 % 4.7 V 0.3 W SOT23
V215	4107027	Zener diode	BZX84	5 % 16 V 0.3 W SOT23
V503	4108639	Diode x 2	BAS28	75 V 250 mA SOT143
V504	4108639	Diode x 2	BAS28	75 V 250 mA SOT143
V505	4108639	Diode x 2	BAS28	75 V 250 mA SOT143
V602	4108639	Diode x 2	BAS28	75 V 250 mA SOT143
V214	4200603	Transistor	BCX17	pnp 45 V 500 mA SOT23
V219	4200836	Transistor	BCX19	npn 50 V 0.5 A SOT23
V202	4200909	Transistor	BC858B/BCW30	pnp 30 V 100 mA SOT23
V600	4200909	Transistor	BC858B/BCW30	pnp 30 V 100 mA SOT23
V501	4200917	Transistor	BC848B/BCW32	npn 30 V 100 mA SOT23
V601	4200917	Transistor	BC848B/BCW32	npn 30 V 100 mA SOT23
V218	4209990	MosFet	IRF9530	p–ch 10 V 12 A TO220
V100	4210010	Transistor	BFP183	npn 12 V 65 mA SOT143
N601	4301062	IC, regulator	LP2951AC	SO8S
D300	4301217	IC, 4xexor 2 input	74HC86	SO14
D500	4303077	IC, EEPROM	128x8 bit DIL8	
N300	4305733	IC, 4 x comp	LM2901	SO14
N400	4305733	IC, 4 x comp	LM2901	SO14
N600	4306287	IC, regulator	78L08C	SO8
N200	4350012	IC, pow.amp.	3 W	ETACS

ITEM	CODE	DESCRIPTION	VALUE	TYPE
Z105	4508232	Duplexer		ETACS
Z102	4508360	Hz–6/t33/rx–filter	917–950 M	ETACS
Z101	4508362	Hz–6/t33/tx–filter	872–905 M	ETACS
X100	5422636	Coaxial connector	SFL	d=2.5 50 $ pcb
X101	5422636	Coaxial connector	SFL	d=2.5 50 $ pcb
X500	5432120	D25–conn angle m metal bracket		UNC
	7313201	Tape pad, white	1x12x25 mm 2–sided	
	9853883	PC board BB5	117.5x152.5x1.6 d 1/pa	

Figure 4: Exploded View



Assembly Parts

ITEM	Q'TY	CODE	DESCRIPTION	VALUE, TYPE
1		9537013	Chassis	1D 21206
2		9537014	Cover	1D 21207
3	2	9780014	Antenna cable	4C 21537
4	24	6150348	Screw FeZn	M3x8 DIN7985
5		6500202	Insulating cool pad	TO–220
6		6430144	Plastic rivet 4.0x3.0 socket 6.4	
7		9510105	RF shield 1	2D 21209
8		9510104	RF shield 2	2D 21208
9		9307501	Antenna label	3N 7940 PA60TG
10			Type label BSH–1	
11				
C1		0200100	Booster module BB3	

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